

## Refine Search

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L1.clm.	2

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side by  
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result set   **Name**

*DB=PGPB; PLUR=YES; OP=OR*

L2   L1.clm.

2   L2

L1   (optical adj1 (disk or disc)) same (control\$4 near3 (board or card)) same (external or remote or separate\$2)

47   L1

END OF SEARCH HISTORY

## Refine Search

### Search Results -

Terms	Documents
(optical adj1 (disk or disc)) same (control\$4 near3 (board or card)) same (external or remote or separate\$2) and L3	2

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	<i>DB=PGPB,USPT,USOC; PLUR=YES; OP=OR</i>		
<u>L4</u>	(optical adj1 (disk or disc)) same (control\$4 near3 (board or card)) same (external or remote or separate\$2) and l3	2	<u>L4</u>
<u>L3</u>	720/652,653.ccls.	52	<u>L3</u>
	<i>DB=PGPB; PLUR=YES; OP=OR</i>		
<u>L2</u>	L1.clm.	2	<u>L2</u>
<u>L1</u>	(optical adj1 (disk or disc)) same (control\$4 near3 (board or card)) same (external or remote or separate\$2)	47	<u>L1</u>

END OF SEARCH HISTORY

## Refine Search

### Search Results -

Terms	Documents
L1 same (driv\$3 adj1 unit)	33

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<u>L4</u>	L1 same (driv\$3 adj1 unit)	33	<u>L4</u>
<u>L3</u>	L1 same driving	170	<u>L3</u>
<u>L2</u>	L1 same (driving adj1 unit)	2	<u>L2</u>
<u>L1</u>	(disk or disc) same (control\$4 near3 (board or card)) same (external or remote or separate\$2)	1913	<u>L1</u>

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### Search Results -

Terms	Documents
L1 same (driv\$3 adj1 unit)	0

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<i>DB=EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR</i>			
<u>L5</u>	L1 same (driv\$3 adj1 unit)	0	<u>L5</u>
<i>DB=PGPB,USPT,USOC; PLUR=YES; OP=OR</i>			
<u>L4</u>	L1 same (driv\$3 adj1 unit)	33	<u>L4</u>
<u>L3</u>	L1 same driving	170	<u>L3</u>
<u>L2</u>	L1 same (driving adj1 unit)	2	<u>L2</u>
<u>L1</u>	(disk or disc) same (control\$4 near3 (board or card)) same (external or remote or separate\$2)	1913	<u>L1</u>

END OF SEARCH HISTORY

Refine Search

Search Results -

Terms	Documents
L1 same (driv\$3 adj1 unit)	2

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<i>DB=PGPB,USPT,USOC; PLUR=YES; OP=OR</i>			
<u>L2</u>	L1 same (driv\$3 adj1 unit)	2	<u>L2</u>
<u>L1</u>	(optical adj1 (disk or disc)) same (control\$4 near3 (board or card)) same (external or remote or separate\$2)	101	<u>L1</u>

END OF SEARCH HISTORY

## Refine Search

### Search Results -

Terms	Documents
L1 same (driv\$3 adj1 unit)	0

Database:

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	<i>DB=EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR</i>		
<u>L3</u>	L1 same (driv\$3 adj1 unit)	0	<u>L3</u>
	<i>DB=PGPB,USPT,USOC; PLUR=YES; OP=OR</i>		
<u>L2</u>	L1 same (driv\$3 adj1 unit)	2	<u>L2</u>
<u>L1</u>	(optical adj1 (disk or disc)) same (control\$4 near3 (board or card)) same (external or remote or separate\$2)	101	<u>L1</u>

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## Refine Search

### Search Results -

Terms	Documents
L1 same ((driv\$3 adj1 unit) or head)	8

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	<i>DB=PGPB,USPT,USOC; PLUR=YES; OP=OR</i>		
<u>L4</u>	L1 same ((driv\$3 adj1 unit) or head)	8	<u>L4</u>
	<i>DB=EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR</i>		
<u>L3</u>	L1 same (driv\$3 adj1 unit)	0	<u>L3</u>
	<i>DB=PGPB,USPT,USOC; PLUR=YES; OP=OR</i>		
<u>L2</u>	L1 same (driv\$3 adj1 unit)	2	<u>L2</u>
<u>L1</u>	(optical adj1 (disk or disc)) same (control\$4 near3 (board or card)) same (external or remote or separate\$2)	101	<u>L1</u>

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L4: Entry 4 of 8

File: PGPB

Sep 16, 2004

PGPUB-DOCUMENT-NUMBER: 20040181624  
PGPUB-FILING-TYPE: new  
DOCUMENT-IDENTIFIER: US 20040181624 A1

TITLE: Optical disc drive

PUBLICATION-DATE: September 16, 2004

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Bae, Byoung-young	Suwon-si		KR
Hong, Soon-kyo	Seoul		KR

## ASSIGNEE-INFORMATION:

NAME	CITY	STATE	COUNTRY	TYPE CODE
Samsung Electronics, Co., Ltd.	Suwon-City		KR	03

APPL-NO: 10/743327 [\[PALM\]](#)  
DATE FILED: December 23, 2003

## FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	DOC-ID	APPL-DATE
KR	2002-85444	2002KR-2002-85444	December 27, 2002

INT-CL-PUBLISHED: [07] [G06](#) [F](#) [13/00](#)

US-CL-PUBLISHED: 710/100

US-CL-CURRENT: [710/100](#)

REPRESENTATIVE-FIGURES: 2

## ABSTRACT:

An optical disc drive that includes a driving unit including a spindle motor to rotate an optical disc, an optical pickup to access the optical disc, and a connection board connected to a computer. A control board to control the driving unit, is installed at an interface device of the computer, separate from the driving unit, and is connected to the connection board.

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## Refine Search

### Search Results -

Terms	Documents
L1 and L5	3

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	<i>DB=PGPB,USPT,USOC; PLUR=YES; OP=OR</i>		
<u>L6</u>	L1 and L5	3	<u>L6</u>
<u>L5</u>	710/100,300,301,313,315,1;235/454;369/18,24.01,47.1,44.31;711/111,112.ccls.	8886	<u>L5</u>
<u>L4</u>	L1 same ((driv\$3 adj1 unit) or head)	8	<u>L4</u>
	<i>DB=EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR</i>		
<u>L3</u>	L1 same (driv\$3 adj1 unit)	0	<u>L3</u>
	<i>DB=PGPB,USPT,USOC; PLUR=YES; OP=OR</i>		
<u>L2</u>	L1 same (driv\$3 adj1 unit)	2	<u>L2</u>
<u>L1</u>	(optical adj1 (disk or disc)) same (control\$4 near3 (board or card)) same (external or remote or separate\$2)	101	<u>L1</u>

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**EAST - [Untitled1:1]**

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     L2: (22) 11 same driv\$3  
☐ Failed  
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☐ Favorites  
☐ Tagged (0)  
☐ UDC  
☐ Queue  
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USPAT ☒ Plurals  
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11 same driv\$3

	U	1	Document ID	Issue Dat	Pages	Title	Current OR	Current X
1	<input type="checkbox"/>	<input type="checkbox"/>	US 6947041 B2	20050920	17	Image processing method	345/428	345/419
2	<input type="checkbox"/>	<input type="checkbox"/>	US 6910218 B2	20050621	14	Slim type optical disc drive	720/653	720/613
3	<input type="checkbox"/>	<input type="checkbox"/>	US 6894880 B2	20050517	9	Protection circuit for semiconductor laser dev	361/56	361/111
4	<input type="checkbox"/>	<input type="checkbox"/>	US 6761635 B2	20040713	36	Remote-control signal receiver	463/39	348/734; 463/37
5	<input type="checkbox"/>	<input type="checkbox"/>	US 6693868 B2	20040217	46	Disc drive having feed chassis supporting memb	720/622	
6	<input type="checkbox"/>	<input type="checkbox"/>	US 6667853 B2	20031223	9	Holding structure of indicating displav devi	360/137	720/657
7	<input type="checkbox"/>	<input type="checkbox"/>	US 6016386 A	20000118	61	Image forming system for preparing subsequen	358/1.15	358/1.17; 358/403;
8	<input type="checkbox"/>	<input type="checkbox"/>	US 5983318 A	19991109	17	Maximizing hit ratio in an automated storage li	711/113	369/30.31 369/30.34
9	<input type="checkbox"/>	<input type="checkbox"/>	US RE36286 E	19990831	25	Preemptive demount in an automated storage li	710/8	369/30.32
10	<input type="checkbox"/>	<input type="checkbox"/>	US 5682227 A	19971028	91	Royalty accounting system for a book copie	355/25	377/8; 399/362;
11	<input type="checkbox"/>	<input type="checkbox"/>	US 5675149	19971007	10	Compact thermal camera	250/332	250/330;



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## 1. Parallel file striping on optical jukebox servers

Tarraga, J.; Hersch, R.D.;

[Multimedia and Expo. 2002. ICME '02. Proceedings. 2002 IEEE International Conference on](#)

Volume 2, 26-29 Aug. 2002 Page(s):173 - 176 vol.2

Digital Object Identifier 10.1109/ICME.2002.1035541

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## 2. Small form factor optical drive: miniaturized plastic high-NA objective and optical drive

van der Aa, M.A.H.; van As, M.A.J.; Braun, A.L.; Hendriks, B.H.W.; Liedenbaum, C.T.H.; van Rompaey, B.; van Rosmalen, G.E.; Schleipen, J.J.H.B.; Borg, H.J.; Nijse, G.J.P.; Nuijens, P.G.; van Aken, N.P.D.M.; Jutte, P.T.; Renckens, J.M.G.; van Steen, R.I.; Bramwell, S.; Stavely, P.;

[Optical Memory and Optical Data Storage Topical Meeting. 2002. International Symposium on](#)

7-11 July 2002 Page(s):251 - 253

Digital Object Identifier 10.1109/OMODS.2002.1028631

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## Small form factor optical drive: miniaturized plastic high-NA objective and optical drive

[van der Aa, M.A.H.](#), [van As, M.A.J.](#), [Braun, A.L.](#), [Hendriks, B.H.W.](#), [Liedenbaum, C.T.H.](#), [van Rompaey, B.](#), [van Rosmalen, G.E.](#), [Schleipen, J.J.H.B.](#), [Borg, H.J.](#), [Nijse, G.J.P.](#), [Nuijens, P.G.](#), [van Aken, N.P.D.M.](#), [Jute, P.T.](#), [Renckens, J.M.G.](#), [van Steen, R.J.](#), [Bramwell, S.](#), [Stavely, P.](#)

Philips Res. Labs., Eindhoven, Netherlands

This paper appears in: [Optical Memory and Optical Data Storage Topical Meeting, 2002. International Symposium on](#)

Publication Date: 7-11 July 2002

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Number of Pages: (xiii+439+ii+70 suppl.)

ISSN:

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Digital Object Identifier: 10.1109/OMODS.2002.1028631

Posted online: 2002-11-07 17:06:17.0

## Abstract

Recent developments in portable consumer devices call for storage systems solutions using compact drive units and cheap storage media. A major advantage of conventional optical storage is the intrinsic low media cost and the ease of manufacturing of replicated ROM media. Third generation optical storage, using a blue laser and a high numerical aperture objective lens, is a perfect technology candidate for a small form factor optical (SFFO) drive. Using third generation optical storage technology 27 Gbytes becomes available on a 12 cm optical disc. Using this data density for an SFFO drive, a storage capacity of over 1 Gbytes become feasible on a coin-sized disc. In this paper we report the realization of a SFFO drive, featuring 1 Gbytes on a 30 mm rewritable optical disc, with dimensions comparable to Compact Flash PCMCIA-like drives. Our main focus in this paper is on the miniaturization of the basic components of the SFFO drive, such as disc, objective and 2D-actuator. Related subjects in Philips R&D are miniature optics and low-dissipation/high-integration electronics.

## Index Terms

## Inspec

## Controlled Indexing

[disc drives](#) [electromagnetic actuators](#) [microlenses](#) [optical disc storage](#) [optical testing](#) [semiconductor lasers](#)

## Non-controlled Indexing

[1 Gbyte](#) [12 cm](#) [27 Gbyte](#) [2D-actuators](#) [30 mm](#) [Compact Flash PCMCIA-like drives](#) [ROM media](#) [manufacture/replication](#) [SFFO drive data density](#) [blue laser diodes](#) [cheap storage media](#) [coin-sized disc](#) [compact drive units](#) [drive storage capacity](#) [low-dissipation/high-integration electronics](#) [miniature optics](#) [miniaturized optical disk drives](#) [objective lens numerical aperture](#) [optical storage system media cost](#) [plastic high-NA objectives](#) [portable consumer devices](#) [rewritable optical disc size](#) [small form factor optical drives](#) [storage systems solutions](#)

## Author Keywords

Not Available

## References

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## Citing Documents

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IEEE STD IEEE Standard

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